REMARKS

In the above amendments, claims 9, 30, and 34 have been amended, and no claims have been added or cancelled. Claims 1-45 are pending in the present application. Applicants believe that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Claim Amendments

Applicants have amended claims 9, 30 and 34 to correct certain typographical errors and/or otherwise more specifically claim the various aspects. These claim amendments were not made in an effort to address the prior art and therefore no claim scope is being surrendered thereby.

Claim Rejections – 35 U.S.C. § 101

The Examiner has rejected claims 30, 34, 40 and 43 under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Specifically, the Examiner argues that the claimed invention is directed to non-statutory subject matter as having no practical utility and appears only to be an algorithm executed by a computer program with no practical application and/or use. Applicants respectfully traverse this rejection.

With respect to Claim 30, which is directed to an apparatus for processing information in a communication system, it recites a controller that is configured to select a subchannel of a plurality of subchannels to send control information to a user terminal at a specific data rate, and a transmitter that transmits control information for the user terminal over the selected subchannel. This is obviously subject matter having utility because it is an apparatus for more efficiently transmitting information in a communication system. Claim 34 is a claim that is directed to an apparatus with a receiver and decoder for operating in that system such that the

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user terminal can use a control channel that operates at the highest data rate. This is also obviously subject matter having utility because it is an apparatus for more efficiently receiving information in a communication system. Claims 40 and 43 have similar utility.

Applicants request that the Examiner withdraw these objections or, in the alternative, provide specific reasons for the objections.

Claim Objections

Claims 37-42 are objected to because of certain informalities. Specifically, the Examiner suggests that the claim language "machine" be changed to "computer." The Examiner further suggests that the preamble for claims 37 and 40 be rewritten to: "A computer readable medium having executable instructions to perform operations including:" Applicants respectfully traverse the objections.

The Examiner has not indicated a reason for the objection and Applicants submit that the use of the term "machine" is not objectionable. It is well established that a computer or other programmable apparatus whose actions are directed by a computer program or other form of "software" is a statutory "machine." Thus, the basis for these computers or programmable apparatuses as configured being statutory is that they *are* "machines." There should not be an objection to the use of the term "machine readable" in these claims. Applicants request that the Examiner withdraw these objections or, in the alternative, provide specific reasons for the objections.

Claim Rejections – 35 U.S.C. § 103

Claims 1-4, 9, 20, 21, 25, 30, 31, 34, 37, 38, 40 and 43 are rejected under 35 U.S.C. § 103(a), as allegedly being unpatentable over U.S. Patent Application Publication No.

2004/0176097 to Wilson, et al. (hereinafter "Wilson") in view of U.S. Patent No. 6,697,346 to Halton, et al. (hereinafter "Halton"). Applicants respectfully traverse this rejection.

Wilson discloses a system having a base station for communicating with multiple user equipment over one or more channels, with at least one of the channels having subchannels distinguishable by spatial separation of transmitters of the respective subchannels. See, Wilson, para. [0010]. The subchannels in Wilson are allocated to the user equipment based on the recognition that different subchannels can support widely differing data rates to a given user equipment, so it might be more efficient to reallocate a subchannel having a lower data rate to a different user equipment for which it can achieve a higher data rate. See, Wilson, para. [0011]. The subchannels in Wilson can be allocated to user equipment on an individual basis instead of allocating an entire channel. See, Wilson, para. [0010].

With regard to Halton, it describes the division of a random access time window into two sections, with a first section containing contention-based random access slots and a second section contains reservation-based random access slots. See, Halton, col. 3, lines 14-15. In Halton, a mobile station requests a guaranteed slot in the group of reservation-based random access slots though a contention-based random access slot. See, Halton, col. 5, lines 50-53. The reserved random access slot is then used for uplink data transfers by the mobile station to the base station. See, Halton, col. 5, lines 54-57. The partitioning information of Halton is transmitted to the mobile stations upon a broadcast control channel (BCCH). See, Halton, col. 6, lines 4-6.

In contrast to Wilson and/or Halton, Applicants disclose a novel and unobvious method and apparatus for partitioning a control channel into a plurality of subchannels, each of which is operated at a specific data rate. These control channels can then be assigned to user terminals based on one or more selection criteria for transmitting control information from the access point

to the respective user terminal. By way of example, a user terminal may be assigned a control subchannel based on the highest code rate under which the access point can transmit control information to the user terminal.

In the Office action, the Examiner relies on Wilson (See Fig. 4, and 6, and paras. [0045] and [0049]) for teaching the transmission of information from an access point to a user terminal on a particular subchannel. The Examiner recognizes that "Wilson fails to disclose partition and transmission of control information via an appropriate channel." Applicants submit that not only does Wilson fail to disclose the partition and transmission of control information over a particular subchannel, but Wilson specifically describes only the use of a single "management channel" to transmit control information. See, Wilson, paras. [0045] and [0049]. Thus, it is clear that Wilson does not teach or suggest the portioning of a _control_ channel into a number of _control_ subchannels so that one or more user terminals can be assigned a _control_ subchannel to receive control information.

The Examiner admits that Wilson does not expressly teach the transmission of control information over a portioned and assigned subchannel having specific data rates and relies on Halton to address the deficiencies of Wilson. Specifically, the Examiner first asserts that "Halton discloses partitioning and transmission of a random access control channel (RACH) information (see Figs. 2-6, col 3 lines 3-35)." The Examiner then asserts that it would be obvious to a person skilled in the art at the time of the Applicants' invention to modify the system of Wilson to incorporate the teachings of Halton.

The Examiner's reliance as to what Halton teaches and suggests and its combination with Wilson is unfounded because Halton does not teach or suggest the partitioning of a control channel to subchannels for the transmission of control information _from_ an access point _to_ user terminals, each subchannel being operated at a specific data rate. Halton teaches the partitioning

of the RACH, a random access request channel that is used to send requests <u>from</u> mobile stations <u>to</u> a base station. In addition, Halton does not teach the use of different data rates for the RACH. Further, the downlink BCCH channel disclosed by Halton, which is a control channel used to broadcast the partitioning information, is not partitioned.

Moreover, Applicants submit that the teachings and suggestions of Wilson and Halton are not combinable because they inherently teach away from such a combination. First, the subchannels of Wilson are assigned to the user terminals without the contention/request system as taught by Halton. Thus, there would not be a need for one in the art to refer to Halton and add its teachings to Wilson. Secondly, the direction of transmission of control information in Halton, with respect to the control RACH "subchannels" that are "partitioned," are exactly the opposite of the direction of the transmission direction of Wilson.

Turning to Applicants' claims, independent claim 1 recites:

> *partitioning a <u>control</u> channel used for transmitting control information into a plurality of subchannels, <u>each subchannel being operated at a specific data rate</u>; ...*

> *transmitting control information <u>from</u> the access point <u>to</u> a particular user terminal on a particular subchannel selected for the respective user terminal.*

Claim 1 (emphasis added). Independent claims 9, 20, 25, 30, 34, 37 and 43 also recite similar limitations. These limitations are not taught or suggested by Wilson or Halton, either individually or combined. Specifically, there is no teaching or suggestion in Wilson or Halton, as proposed by the Examiner, of partitioning a control channel into a plurality of subchannels, each of which is operated at a specific data rate, and the transmission of control information over these subchannels from the access point to a particular user terminal.

Applicants submit that claims 2-4, 21, 31, 38 and 40, as being dependent, either directly or indirectly, from one of the independent claims discussed above, and therefore, include all the limitations of the claims from which they respectively depend. Accordingly, these claims are also allowable over the art of record for the same reasons set forth hereinbefore, as well as the additional limitations recited. These additional limitations will not be addressed at this time because a *prima facie* case has not been established against the independent claims.

Therefore, for at least these reasons, Applicants contend that rejected claims 1-4, 9, 20, 21, 25, 30, 31, 34, 37, 38, 40 and 43 are allowable over the art of record.

Allowable Subject Matter

The Examiner has objected to claims 5-8, 10-19, 22-24, 26-29, 32, 33, 35, 36, 39, 41, 42, 44 and 45 as being dependent upon a rejected base claim, but has indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants would like to thank the Examiner for identifying the allowable subject matter in these claims. Applicants believe that, based upon the above response and arguments, all pending claims are currently allowable. Thus, Applicants have not amended claims 5-8, 10-19, 22-24, 26-29, 32, 33, 35, 36, 39, 41, 42, 44 and 45 to rewrite them in independent form in this response.

CONCLUSION

All objections and rejections having been addressed, it is respectfully submitted that this application is in condition for allowance and a Notice to that effect is earnestly solicited. If any

points remain in issue that the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

CHARGE STATEMENT: The Commissioner is hereby authorized to charge fees that may be required relative to this application, or credit any overpayment, to Deposit Account 17-0026.

Respectfully submitted,
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